

I claim:

1. An automated stowage and retrieval system comprising:

a system of pallet carriers disposed in a slide matrix in which each individual pallet carrier is designed to support palletized and containerized cargo and weapons

- 5 and to move along the deck or subfloor of a magazine or hold in x and y axes within a slide matrix of identical pallet carriers, wherein, each pallet carrier comprises a rectangular structure designed to withstand the weight of the payload it conveys under worst-case ship dynamic conditions, and incorporating a vertical load bearing system, appropriate features for x-y guidance and x-y drive actuation, mechanical features,
- 10 such as vertical pins, on its upper surface to accommodate standard payload interface features, such as sockets on the bottom side of each payload, that secure or lock the load onto the pallet carrier; wherein, the mechanical features provided on each payload that secure or lock that payload to one pallet carrier can also serve to secure or lock together two, three, four or more pallet carriers that are adjacent in the slide
- 15 matrix where payloads are longer, wider, or longer and wider than a single carrier such that this set of pallet carriers and the single payload that they jointly support move together within the slide matrix; wherein, pallet carrier motion is achieved using a system of external drives in the form of two independent x-axis and y-axis actuators mounted beneath the pallet carrier, each actuator system comprised of a set of
- 20 servomotor-powered pinion gears situated on the deck or subfloor that drive against racks located on the pallet carrier itself, each drive system being provided with suitable power and control electronics situated in a convenient location; wherein, the vertical load bearing and x-y guidance system of the pallet carrier comprises a of set steel rollers on antifriction bearings mounted on the deck or subfloor that engage
- 25 guide channels in the bottom surface of the pallet carrier to allow the pallet carrier to

move along the subfloor of the magazine or hold in x and in y; wherein, a motion controller comprising a PC/CPU, situated in a convenient location, is provided which accepts a command for the next required pallet carrier move in x or y from a remote system controller via a communications bus and which subsequently executes that

5 command autonomously.

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